

Abstract

The electrooptical converter comprises sequentially located on the optical axis: at least one optical lighter, a transparent support or M transparent supports, each in the form of at least one plane-parallel plate or at least one prism of total internal reflection, at least one line modulator, at least one visualizer, a perception device, and at least one control device. Each line modulator comprises a transparent electroconducting layer applied to the transparent support, the electroconducting layer being covered with a transparent gel-like layer, and a system of i parallel ribbon control electrodes and ground electrodes, arranged in one plane on a second support corresponding to each of line modulators and located with a gap above the transparent gel-like layer and electrically connected to the corresponding control device. Each transparent support together with the corresponding at least one line modulator forms a line element. The optical lighter includes a lengthy light source and a lighting convertible lens sequentially located on the optical axis, and the visualizer includes a Fourier-objective and a visualizing diaphragm sequentially located on the optical axis. The light source is pulse or continuous. The frequency of light pulse recurrence is equal to the line frequency of the image. The ribbon control electrodes are electrically connected to the periodic structure of control teeth, and the ground electrodes are electrically connected to the periodic structure of ground teeth. For each line pixel the teeth together with the corresponding electrodes look like two conducting combs isolated from each other. The combs' teeth are located in parallel to the lengthy light source, while the location period of the pairs of the control teeth and ground teeth λ_{teeth} is calculated from the relation: $\lambda_{\text{teeth}} \leq \sqrt{2} \lambda_{\text{light}} / \alpha_{\text{div}}$, wherein λ_{light} is a wavelength of the lengthy light source and α_{div} (in radians) is a divergence of the radiation of the light source in a direction perpendicular to the combs' teeth.